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(71) Applicant : LION CORP

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(72) Inventor : FUJIZU SATORU

NORITAKE FUMITOMO

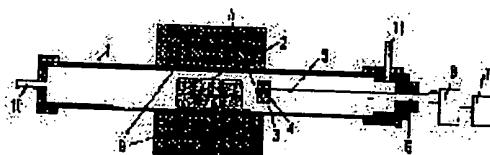
HORIGUCHI YASUNOBU

(54) PRODUCTION OF TRANSPARENT ZINC OXIDE

(57) Abstract:

PURPOSE: To produce the ZnO crystal having a large thickness and high transparency by rotating a substrate at the time of sublimating ZnO in the high-temp. part in a synthesizing pipe of a reducing atmosphere and depositing transparent ZnO on the substrate in a low-temp. part.

CONSTITUTION: A sintered body B of ZnO powder is placed in the synthesizing pipe 1 made of mullite and is heated with a heater 9. A reducing gaseous mixture composed of gaseous CO and gaseous H₂ is supplied into the synthesizing tube 1 from a gas introducing pipe 10 on the upstream side thereof and is passed to the downstream side and is discharged from a discharge port 11. A base body 4 made of a single crystal or polycrystal having crystal axes of pellet-shaped ZnO, alumina, sapphire, silicon, quartz glass, etc., is mounted to a revolving shaft 5 on the downstream side of the ZnO sintered body B and the base body 4 is rotated by a motor 7 and a reduction gear 8. The ZnO sintered body B of the high temp. sublimates by reacting with the reducing gas and comes into contact with the front surface of the base body 4 of the low temp. rotating on the downstream side. The transparent ZnO crystal body having the C-axis directing to the high-temp. part is thus deposited and formed at a high speed.



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